E/CONF.39/D/95
17 Oct.1962
ORIGINAL : ENGLISH

UNITED NATIONS CONFERENCE
ON THE APPLICATION OF SCIENCE AND TECHNOLOGY
FOR THE BENEFIT OF THE LESS DEVELOPED AREAS

Agenda Item: D.1

India

INDUSTRIAL DEVELOPMENT

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INDUSTRIAL DEVELOPMENT

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I The need for industrial development in the less developed areas

1. There are several countries which, while highly developed, import much of their raw material and a good deal of their food. There are other areas which have large physical resources which are yet untapped. There is, besides, in some of the latter countries, a very large population. In these conditions, the population is generally backward and poor, often living at or below the subsistence level. There is thus a considerable imbalance in the development of the world. This state of affairs was not questioned so long as, according to the spirit of the age, a colonial structure of the world was accepted. In the conditions of the modern world, however, with the rapid development of communications, travel and interchange of ideas, colonial structures are no longer accepted. Where they exist, tensions and frictions develop. In order to cure this situation, the large imbalance in world development has to be corrected and corrected speedily.

2. There are countries with very large resources and with relatively meagre populations. There are others where resources and population are more evenly balanced. There are still others where populations bear very heavily indeed on available resources. In any of these cases, development would mean development not only of physical resources but also of human material. It is only by a co-ordinated development of both that the world would reap the benefit of development. In areas with large populations, dependence on agriculture and on similar occupations for a living is considerable. The productivity of agriculture is usually low. There is unemployment to a degree and fairly widespread under-employment. Purchasing power is diffused and standards of living and consumption are usually low. In order to remedy these deficiencies, it is necessary to draw away surplus labour from agriculture and provide it with alternative occupations. This process, where populations are large, takes several years. Meanwhile, because of the usual

high rate of multiplication, the pressure on resources continues unabated. Only relatively small net relief is obtained. The need in the case of these countries is quite obviously for a very rapid rate of economic growth along with very effective steps for a reduction in the growth of population.

3. In the more fortunate countries which are somewhat better balanced between resources and population, again, standards of living and consumption are generally not very high. In these cases, industrial development would lead to higher overall purchasing power and higher standards of living and consumption. In the case of countries with large resources but relatively small populations, again, industrial development is needed for making available to the world as a whole, the resources which would be put to use by such development. The problem in regard to this last type of country, however, is often not such a crucial problem in regard to its own population. Sometimes, in such cases, the population remains low as a result of national policies e.g., restriced immigration and such measures.

4. There are thus three types of situations. The problems of development in these cases and remedies for them are not all similar. Nevertheless, it is true that in all cases industrialisation generates new resources in the form of newly exploited physical resources, higher income and purchasing power which would help in developing the country all round, and human resources in the form of new skills. All these factors would contribute to an overall increase in welfare. The element of the development of human resources is, in many ways, even more important than the development of the other kinds of resources. Up till recently, there have been, on the one hand, the industrialised areas where the level of educational, technological and intellectual development has been high. On the other hand, there have been vast pockets of illiteracy and poor educational development where there has been little preparation for the use of technology. There have been, so to speak, the elite and the non-elite. This position can no longer remain without active steps being taken to amend it. In the age of science and technology, the existence of two classes of humanity cannot but breed differences, misunderstanding and trouble.

5. Industry set up by the use of technology is not merely a means of achieving economic betterment. It is a way of life. It has been the experience of countries and areas which have become relatively recently industrialised that life takes on a new tempo and a new meaning. People get to be in a hurry and want to get things done. In many areas of the world, it is this urge in relation to the use of time and to get things done that is needed. When a realisation of the value of time and of science and technology gets to be more widespread, there would be a closer sharing in progress world-wide: and, the less-developed countries will receive this benefit in the direction of a very much quickened intellectual and other development. Needless to say, this movement can bring nothing but benefit to both the developing countries and to the world as a whole.

II Formulation of industrial programmes in the less developed areas

6. It is becoming increasingly recognised even in the developed countries that the optimum use of resources is secured only by some kind of programming. France and the United Kingdom which are normally looked upon as countries with a markedly free enterprise outlook, can be mentioned in this context. In the case of the less developed countries the need for programmes is even greater, considering the size of the problem of physical development and of the preparation of the population for achieving development by the use of science and technology. The formulation of programmes is necessarily dependent on the nature and volume of physical resources, the levels of income and consequent capacity for saving, and the stage of development in education, particularly technical education, in these countries. The programmes must ensure an immediate rate and pattern of development needed for them to achieve self-sustaining growth after an initial period of sizeable dependence on external assistance. It is only by careful programming that it will be possible to relate the desired rate of growth to the internal resources and external assistance available.

7. The conscious promotion of industrial development necessitates a national economic plan which will give direction and a sense of purpose to the people. The vicious circle of "underdevelopment" may be broken at a number of points. But the will to do so must first be there or be generated. There must be an awakening and a driving desire for change. Without these, no measures for improvement are likely to be successful. Both the political and the social measures necessary for promoting these urges must be undertaken. But development in the economic field need not await the completion or near-completion of such reforms. Indeed, economic development often provides these urges itself. An industrial society has a built-in motivation for growth and progress. While the plan will reflect the hopes and aspirations of a people, it must be practical, effective and realisable.

8. Plans are usually conceived in terms of investment. Decisions have to be taken to increase the amount of investment with a view to adding to the productive power of the country and hence to the growth of income per head. In a country depending largely on a primitive or near-primitive agriculture, there are not the surpluses which provide the resources for investment. Nevertheless, until industry becomes established and can provide surpluses, agriculture has to make a substantial contribution towards investment. The promotion of industrial development and the rapid improvement of agricultural production and productivity are, therefore, interdependent. A programme of developing manufacturing industries in an underdeveloped country is, thus, called upon to assist in improving agricultural production through the use of fertilizers and agricultural implements, in providing alternative employment to those who are, or would become, surplus in rural areas and in creating new employment opportunities for the existing unemployed and the expected additions to the labour force. All this entails a concentrated effort in the field of exploitation of new resources.

The building of dams for irrigation and the generation of power, the manufacture of fertilizers, the mining of coal, iron and other minerals, the development of railways, roads and other means of communication and the setting up of workshops and factories, are all means through which the nation's resources are utilized. The provision and the expansion of facilities for training people who participate in the starting and running of these projects add to the quality and quantity of skilled human resources. By this process, productivity increases, incomes and expectations rise, a managerial and entrepreneur class grows, one scheme leads to another and industrialisation becomes a cumulative, self-generating and self-propelling process necessitating and leading to the fullest use of existing resources and the development of newer ones.

9. The plan for economic development has to be an integrated plan in which the place of industry has to be consistent with and in phase with growth in other sectors. It would be futile, for instance, to plan industrial development on a long-term basis without agricultural development which will provide the initial investment surpluses, or without development in the fields of education - especially technical and technological education - and health. While the most complicated industrial installations take no more than five to six years to set up, it takes a minimum of fifteen years to produce one good engineer: and, having produced an engineer, the nation obviously requires that his skill and talents are used for the longest possible period through healthy longevity. Other aspects of the infra-structure like railways, roads, coastal shipping services and utilities like power are also basic to industrial development and have to be planned alongside - and in many cases ahead of - industrial development. The industrial programme itself has to be planned in terms of targets, both physical and financial. Production of individual items has to be in conformity with anticipated demand, both internal and in the export market. This applies especially to cases where the output of one industry is an input of others. The relationship between steel and engineering industries is a case in point. India's plan to put up three new steel plants simultaneously during the Third Five-Year Plan was considered at the time too bold. We now find that this was not really enough. There is, again, a considerable inter-dependence between steel and cement for constructional purposes. The shortage of either interferes with the implementation of programmes of industrial building and housing.

10. The preparation of a national plan requires a careful study of available resources including imports. On the side of demand, one must not forget the demand in foreign markets, current or potential. The planning of investment in the Indian textile industry consistently takes into account the measures necessary for increasing production of cloth both to meet internal demand and to cater for the export market. In the planning of the engineering and chemical industries, again, we do take into account our export potential.

11. The balancing of supply and demand has to be visualised in physical terms. But as the operation of the economy is carried

on through a monetary system, it becomes necessary to mobilise the financial resources which will make possible the investment required to be made. Most of these resources will generally be in local currency and involve an increase in the rate of saving. India's Third Five-Year Plan, for instance, envisages a rise in the rate of domestic saving from 8.5 per cent to 11.5 per cent. Progressive increases in taxation, loans from the public, small savings, profits from commercial enterprises in the public sector and some degree of deficit financing are the sources which would provide the needed investment funds. Basically, all these represent a postponement of consumption. In the case of economies which need rapid development and which are usually low-income and low-consumption economies, the burden of consumption postponement poses a serious dilemma which is not only economic but also has political and social aspects.

12. It is here that the richer and more developed countries have a stake, an opportunity, and, one may even perhaps venture to say, a duty. The underdeveloped countries of the world have much the larger proportion of the world's population. There is a very considerable gap between their standards of living and those of the richer industrial nations. The numbers multiplied by the gap is a measure of the opportunity in terms of consumption potential and, therefore, of the growth potential available both to the developed and to the underdeveloped countries. There is a growing understanding of the process of development in the world, thanks to intensive work by international bodies, Governments and institutions. Loans by the Governments of the more prosperous industrialised countries and by specialised institutions are on the increase. There is a growing international flow also of private capital.

13. The financing of development in these forms has begun already to pose other problems. The loans now being received have to be serviced and, later, repaid. This can be done only through an ever-increasing flow of exports from the developing countries. High tariffs, quantitative restrictions and regional economic groupings generate a certain amount of pessimism in regard to their development in the minds of the people of the less-developed countries. It is their hope that exactly as the problem of providing finance for development is being better understood and implemented, so will the growing problem of the servicing and repayment of loan assistance be understood and resolved. One-fifth of the aid which India expects to receive during her Third Five-Year Plan is meant to cover the refinancing of her maturing obligations. Commitments of this order entail a severe and continuing strain on the balance of payments of the developing countries. This pressure is aggravated by the deteriorating terms of trade and the unwillingness of the industrialised countries to accept imports of manufactured goods from their erstwhile markets. The programme of investment of the developing countries will itself, in some measure, have to be reoriented towards fostering certain industries more for their export potential than for meeting internal demand. In this, of course, economic considerations of a rational international division of labour and the possibility of the channelling of expansion of existing industries or the starting of new industries by the

less-developed countries into directions where such countries will be economically efficient producers, should receive due attention. In order that the less-developed countries may not lag far behind the industrialised countries technologically, consideration has to be given to the acquisition of skills in fields such as the peaceful uses of atomic energy - e.g., atomic energy power generation - and electronics. Planning should include training programmes both at home and abroad in such fields so that, at an appropriate stage in development, local nationals will be available to deal with at least the maintenance and repair of modern plant utilising such techniques and technology.

III Implementation of an industrial development programme

14. A programme of industrial development having been decided upon in terms of the exploitation of natural and human resources, the extent of development in different industrial fields, inter-industrial relations and financial resources, the all important question of implementation arises. Planning and implementation are complementary. Planning has to take account of the available physical resources and, even more importantly, of human resources in terms of skills. The practicable pace of development of services like transport and communications and power generation, besides the pace at which skills can be imparted by training, quite often sets the targets and the pattern of a plan. In the absence of a sizeable managerial and entrepreneurial class, the functions of planning have largely to be undertaken perforce by Governments. Governmental responsibility in this matter is attracted also by the need from the beginning to aim at the securing of a wide measure of social justice, on human grounds as also in the interests of the preservation of democratic values and ways of life. In discharging this responsibility for planning in a democratic system, the Governments would naturally have to associate with themselves the existing managerial and entrepreneurial classes as they associate other classes. They would have to ensure that both in drawing up the plan and in the implementation of it, there is a fair measure of general agreement upon the aims and objectives as also the practical pattern of implementation.

15. In the circumstances of the industrial development of the less-developed countries, a certain direction and deployment of scarce resources is inherent. Market forces alone will not be a sufficient instrument for the securing of the overall national interest. A degree of control becomes inevitable and would have to take the form of licensing of industrial activity which has, for a corollary, supplementary measures such as the control of capital issues, restricting and channelling of the use of foreign exchange, a distribution control on important industrial raw materials and services which are in short supply etc. There is also the positive aspect of this situation. For instance, the Industries (Development & Regulation) Act, 1951 (of India) which enables Governmental interference with the exercise of entrepreneurial choice, provides simultaneously for liaison and co-ordination between Government and industry through a number of Development Councils for different

industries or groups of industries which do a continuous review of the quantum and pattern of growth in their respective fields.

16. The developing countries often have a sizeable industrial sector based on traditional skills and techniques generally producing consumer goods and handicrafts. These, and especially the latter, have been at different times, considerable earners of foreign exchange besides supplying internal demands. Capital resources even in terms of local currency are not limitless. It is, therefore, necessary, in those fields in which small scale production based on traditional skills and techniques are not altogether ruled out, not only to maintain but also enlarge production by these labour-intensive techniques. While available capital resources are being deployed towards the establishment of a satisfactory infra-structure of services, skills, utilities and basic industries, the rising needs of a growing population with aspirations of at least slightly higher consumption levels could be met in this way. By slightly mechanising and otherwise improving techniques and designs, the products of these industries and crafts could provide extra export earnings in volume which is not to be scoffed at. The case of the Indian handloom textile industry is an important instance of a craft industry which has made and is making a very valuable contribution to the economy. There are some other industries which may be mentioned in this connexion, e.g., the tanning and shoe-making industries, the edible oil extraction industry, the hand-made paper industry etc. In all these fields, there are, in India, units both in the small scale industry sector and in the organised factory industry sector. A division of labour between these sectors has been successfully attempted. For instance, the handloom industry uses mill-spun yarn and makes certain varieties of cloth which lend themselves more to decentralised production. By the application of mechanical attachments or of power to these looms, the textile industry can be, and has been, to a large extent, decentralised. These developments are similar to the existing pattern of the cotton textile industry in Japan. The vegetable tanning industry is carried on on a small scale with improvements, and caters for the foot-wear and agricultural needs of the rural population. With improved techniques, the small scale shoe-making industry not only supplies the internal market but exports substantialquantities of foot-wear to several countries. The vegetable oil industry is decentralised through improved techniques, in regard to edible oils. Oilseeds are crushed in rural communities who consume the oil and utilize the cake as manure and fodder. The mill sector produces industrial oils, e.g., linseed, castor and groundnut (which is used as the base for the hydrogenated oil industry). The pattern here is that where strict laboratory and chemical control is needed, the operations are done generally in the mill sector whereas for providing just a wholesome article of diet, the rural sector is not only sufficient but makes a valuable contribution through saving two-way transport thereby improving the economics of oilseed and oil production and contributes valuable manure to the rural economy. The hand-made paper industry provides employment in communities where there is often not any other industrial activity. Sometimes, the hand-made paper industry uses mill-made dry pulp. These are all craft industries which have been and are being improved

constantly by technical assistance and financial support in the form of credit provided by Governmental agencies. At least at a transitional stage for providing consumer goods, this evolution and improvement of craft industries would make a contribution of considerable value to economic development while limiting the pressure on available capital resources. Several of these industries could be developed into modern, mechanised industries at a later stage, thereby releasing the operatives from a concentrated and wearying effort over long hours to earn their daily bread and giving them a little leisure and opportunity for developing their personalities in human and cultural terms. The skills learnt in the transitional stage would be valuable in the later stage. An endeavour is made continuously to increase productivity in these craft and semi-mechanised craft industries so that earnings and conditions of work may improve as also the quality and quantity of production. The reservation of particular varieties and sectors to these craft-improved industries in sectors of industry where there is also an organised factory industry has needed much thought and organisation and is known in India as the provision of "common programmes" for small scale and larger scale industries.

17. Even at a later stage in industrial development when the developing countries have become modern industrial economies, decentralisation based on the use of power will provide sizeable social gains. The arrest of the drift to the town and city would solve or prevent altogether from developing, the problems associated with the typical industrial city of the West, e.g., housing, travel and other problems identified with concentration. Even in large industries, Japan has preserved a very considerable decentralised pattern. In the Western world, there is a reappraisal of the pattern of industrial development constantly going on. The "new towns" of Britain, satellite towns and the growing rural industrial communities in the U.S.A. are all significant pointers. The developing countries would do well to urbanise the rural areas by the provision of amenities like electricity and power, housing, health and sanitation facilities, roads and communications, bus and coach services and amusement facilities before the drift to the town sets in. Indian experience in the provision of rural industrial estates is encouraging. This deliberate and conscious action would also ensure a dispersal of industry and, through it, of employment and prosperity throughout the country.

18. A most important need, more even in the field of implementation than of planning, is the provision and utilisation of technical and technological training through basic training, in-plant training, theoretical training through evening classes, sandwich systems and other such means. As securing the effective availability of a large number of engineers for the ultimate goal of a modern industrial economy based on the full use of science and modern technology is a long-term process, the teaching of mathematics and science and the creation of facilities for higher education in engineering and technology are problems of the highest priority and urgency although the fruits of this investment cannot be gathered quickly. This cannot and must not be neglected. This applies also to the conscious direction of training in management

and cost accounting. The availability of design engineers has to be dovetailed with the opportunities for their effective employment. There should be a planning of the training of design engineers taken in hand simultaneously with the planning of the heavier engineering and chemical industries so that there is no gap in the need for and the availability of design engineers.

19. Developing countries which have to plan in terms of self-sustaining growth have to go in for some basic industries like steel and the machine building industries. The volume of production and the programme for the establishment of these industries will differ from case to case. They will depend on factors like the availability of raw material, e.g., iron ore and coal, the availability of transport, communications and power and the availability, current and potential, of technically trained personnel. These industries generally call for heavy investment and pose organisational and managerial problems of a nature which private enterprise often finds it difficult to tackle. They also involve a considerable waiting period before profits come in and, even then, do not always bring in high profits. For these reasons, the private sector, in which the main motivation is profit, is unable and unwilling to tackle the establishment of such industries. A certain amount of activity in the public sector in these major fields is thus, often, inevitable. World thinking is now moving in the direction that there should be a maximisation of profit in the public sector industries including public utilities so that surpluses may be generated which can be invested in further economic and social development. This would ensure the attainment of the objectives of development which add up mainly to securing the largest social gain for a particular volume of investment. The public sector, being a new entrant, can, in many fields, also provide wholesome competition to the private sector especially where there is a certain reluctance in the private sector to modernise plant and techniques. There would, therefore, be need, in implementing plans of industrial development, to demarcate areas, in the national interest, which should be reserved altogether for the public sector, areas in which both the public and private sectors may operate together in free competition and those which may well be left to the private sector ordinarily. The forms of organisation of the public sector and the conduct of the relations between Parliament, Government and the management in the public sector all need careful consideration. The need for plant autonomy and the requirements of securing the most prudent use of public funds have to be reconciled in a pragmatic and practical manner. The location of industries has to be planned in such a way as to achieve a workable compromise between pure economic factors pertaining to particular units or industries and the need for dispersing not only employment, purchasing power and prosperity but also opportunities for the exercise of technical, technological and managerial skills throughout the country. In the small scale sector, co-operative organisation has given impressive results in the fields both of production and of marketing. In a monetary economy, it is obvious that the needs of industry both in the organised factory sector and in the small scale sector have to be recognised and catered for by specialised financing institutions like Industrial Finance Corporations, Industrial Credit and

Investment Corporations etc. The normal banking system would, in most cases, provide the working capital and short-term finance. Resources have to be found for at least partly financing the public sector by appropriate Governmental revenue and fiscal policies both in the form of equity participation and in the form of medium and long-term loans. And, overall, both for the private and for the public sectors, external resources have to be found both by following a dynamic export policy and by securing long-term loans on favourable terms in regard to repayment in local currencies, where possible, and low interest rates. Continuing and ever-more sophisticated technical assistance has also to be secured from abroad over a period of years.

20. The economic development of the less-developed countries, therefore, sets a challenging task both to the developing countries and to the more advanced and prosperous industrialised countries. The peaceful application of science and technology to the solution of the massive problem of securing the rapid economic development and rising prosperity of the less developed millions of the world is a task worthy of the highest goals of achievement both of the mind and the spirit in the "decade of development" and generally in the second half of the twentieth century.

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